Remarks

Claims 1-13, 16, and 25-40 are cancelled without prejudice or disclaimer. Applicants reserve the right to pursue the subject matter of these claims in a continuation or divisional application.

Claims14, 15, 17-24, and 41-48 are amended and new claims 55-73 are added. The amended claims and new claims are fully supported by the specification and add no new matter to the application.

A mark-up version of the amended claims is enclosed with this response to show the changes made to the claims.

Claims 49-54 are allowed.

Claims 14, 15, 17-24, and 41-73 are pending.

Rejections based on 35 U.S.C. § 103(a) – Wheatley et al. (US '419) in view of Wheatley et al. (US '578) and in view of Quinn et al. (US '141) or Fukuda et al. (US '538) or Yoshinaka (US '291)

Claims 14-24 and 41-46 were rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,049,419 issued to Wheatley et al. (herein after "US '419") in view of U.S. Patent No. 5,149,578 issued to Wheatley et al. (hereinafter "US '578") and in view of U.S. Patent No. 4,020,141 issued to Quinn et al. (hereinafter "US '141"). Applicants submit that the pending claims are patentable over this combination of references.

US '419 discloses a dielectric multilayer film that can reflect infrared radiation. This reference discloses the following in column 24, lines 19-26:

> "Employing a heat set temperature as high as possible without causing film breakage in the tenter oven 120 reduces the shrinkage during a heated embossing step…If the film is not heat set, heat shrink properties are maximized, which may be desirable in some security packaging applications."

The disclosure about shrinkage is focused on embossing and security applications, neither of which are part of the present invention. There is no disclosure in US '419 about controlling the amount of film shrinkage. There is also no disclosure in US '419 about controlling the shrinkage such that the film can conform without substantial wrinkling to a

substrate, much less a substrate having compound curvature. There is no disclosure, teaching, or suggestion that the amount of shrinkage be up to about 4 percent in both in-plane directions as recited in independent claim 20 or in the range of about 0.4% to about 3% as recited in claim 55 of the present invention.

Further, US '419 provides no disclosure, teaching, or suggestion that the film can be positioned between two substrates. There is no disclosure, teaching, or suggestions that when the film is positioned between two substrates having compound curvature, the film is capable of shrinking to conform to each substrate without substantial wrinkling as recited in independent claims 14. There is no disclosure, teaching, or suggestion that the film and the two substrates are of comparable size.

Claims 14-24 and 41-46 are not obvious over US '419. The above mentioned deficiencies of US '419 are not overcome by combination with the other cited references.

US '578 discloses a multilayer film including layers of two or more diverse thermoplastic materials of differing refractive indices whereby the film retains a permanent color change as evidence of tampering. The film can be heat-shrinkable and used as a shrink band joined to two portions of an item that are movable with respect to one another, such as the neck and screw cap of a prescription bottle. Alternatively, the films can be used in the form of a membrane seal across an opening in a container.

There is no disclosure, teaching, or suggestion that the amount of shrinkage be up to about 4 percent in both in-plane directions as recited in independent claim 20 of the present invention. There is no disclosure, teaching, or suggestion that the amount of shrink be in the range of about 0.4% to about 3% as recited in claim 55.

There is no disclosure, teaching, or suggestion that the film be positioned between two substrates, much less substrates having compound curvature. Rather, the US '578 film is positioned around the outside of two portions of an item that can be moved relative to each other. There is no teaching that the size of the film and two substrates are comparable. Rather, the US '578 film is wrapped around only a portion of the item (e.g., the neck and top of a prescription bottle).

Thus, claims 14-24 and 41-46 are not obvious over the combination of US '419 and US '578. US ' 141 does not remove the deficiencies of these references.

US '141 discloses a heat-sealable, heat-shrinkable, biaxially oriented polyester single layer film. The film is wrapped around an article and shrunk to form a seal around the article. The film can shrink in the range of about 31% to about 47%.

There is no disclosure, teaching, or suggestion that the amount of shrinkage in both in-plane directions be up to about 4 percent as recited in independent claim 20 or in the range of about 0.4% to about 3% as recited in claim 55 of the present invention.

There is no disclosure, teaching, or suggestion that the film be positioned between two substrates, much less two substrates having compound curvature. Rather, the US '141 film is positioned around an object to be sealed. There is no disclosure, teaching, or suggestion that the size of the film is comparable to the size of two substrates. Rather, the US '141 film needs to be shrunk by at least 30 percent to cover the object over which it is wrapped.

Applicants respectfully request withdrawal of the obviousness rejection based on the combination of US '419, US '578 and US '141.

Claims 14-24, and 41-46 were also rejected under 35 U.S.C. § 103(a) as obvious over Wheatley et al. (US '419) in view of Wheatley et al. (US '578) and in view of Fukuda et al. (US '538). Applicants submit that the pending claims are patentable over this combination of references.

For at least the reasons stated above, claims 14-24 and 41-46 are not obvious over the combination of US '419 and US '578. US '538 does not remove the deficiencies of these references.

US '538 discloses a shrinkable polyester film that can be used as labels for various vessels such as a glass bottle, heat-resistant PET bottle, and non-heat-resistant PET bottle. The film has a shrinkage of not less than about 30 or 40 percent in one direction and not more than 20 percent in the other direction.

There is no disclosure, teaching, or suggestion that the amount of shrinkage in both in-plane directions be up to about 4 percent as recited in independent claim 20 or in the range of about 0.4% to about 3% as recited in claim 55 of the present invention.

There is no disclosure, teaching, or suggestion that the US '538 film be positioned between two substrates having compound curvature. Rather, the US '538 film is positioned as

a label on a bottle. There is no disclosure, teaching, or suggestion that the size of the US '538 film is comparable to the size of two substrates.

Applicants respectfully request withdrawal of the obviousness rejection based on the combination of US '419, US '578 and US '538.

Claims 14-24, and 41-46 were also rejected under 35 U.S.C. § 103(a) as obvious over Wheatley et al. (US '419) in view of Wheatley et al. (US '578) and in view of Yoshinaka et al. (US '291). Applicants submit that the pending claims are patentable over this combination of references.

For at least the reasons stated above, claims 14-24 and 41-46 are not obvious over the combination of US '419 and US '578. US '291 does not remove the deficiencies of these references.

US '291 discloses a single layer thermo-shrinkable polyester film that shrinks at least 30 percent or more in one direction and 15% or less in the transverse direction. The US '291 films can be used as a wrapping material, as a covering, or to hold objects together.

There is no disclosure, teaching, or suggestion that the amount of shrinkage in both in-plane directions be up to about 4 percent as recited in independent claim 20 or in the range of about 0.4% to about 3% as recited in claim 55 of the present invention.

There is no disclosure, teaching, or suggestion that the film be positioned between two substrates, much less two substrates having compound curvature. Rather, the US '291 film is positioned as an outer wrapping material. There is no disclosure, teaching, or suggestion that the size of the US '291 film is comparable to the size of two substrates. Rather, the US '291 film shrinks by 30 percent or more in one direction to conform to the object.

Therefore, Applicants respectfully request withdrawal of the obviousness rejection based on the combination of US '419, US '578 and US '291.

Rejections based on 35 U.S.C. § 103(a) –Wheatley et al. (US '578) in view of Quinn et al. (US '141) or Fukuda et al. (US '538) or Yoshinaka (US '291) and in view of Wheatley et al. (US '419)

Claims 14-24 and 41-46 were rejected under 35 U.S.C. § 103(a) as being obvious over Wheatley et al. (US '578) in view of Quinn et al. (US '141) and in view of Wheatley ("419). Applicants submit that the pending claims are not obvious.

For at least the reasons stated above, the combination of US '578, US '141, and US '419 does not disclose, teach, or suggest claims 14-24 and 41-46. Applicants respectfully request withdrawal of the obviousness rejection based on this combination of references.

Claims 14-24 and 41-46 were rejected under 35 U.S.C. § 103(a) as being obvious over Wheatley et al. (US '578) in view of Fukuda et al. (US '538) and in view of Wheatley ("419). Applicants submit that the pending claims are not obvious.

For at least the reasons stated above, the combination of US '578, US '141, and US '419 does not disclose, teach, or suggest claims 14-24 and 41-46. Applicants respectfully request withdrawal of the obviousness rejection based on this combination of references.

Claims 14-24 and 41-46 were rejected under 35 U.S.C. § 103(a) as being obvious over Wheatley et al. (US '578) in view of Yoshinaka et al. (US '291) and in view of Wheatley ("419). Applicants submit that the pending claims are not obvious.

For at least the reasons stated above, the combination of US '578, US '141, and US '419 does not disclose, teach, or suggest claims 14-24 and 41-46. Applicants respectfully request withdrawal of the obviousness rejection based on this combination of references.

Objections

Claims 47-48 were objected to as being dependent on a rejected base claim. The Examiner stated in the Office Action that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants have amended the base claim. Applicants submit that claims 47-48 depend from claims that are allowable and respectfully request withdrawal of the objection based on these claims.

Allowable subject matter

Claims 49-54 are allowed. Applicants submit that these claims are allowable for the reason stated by the Examiner in addition to other reasons.

Applicants believe that the pending claims 14, 15, 17-21, 24, 41-73 are in condition for allowance and respectfully request a notice of allowance.

Respectfully submitted,

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Date

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Marked-up Version to Show Changes Made

In the claims:

Cancel claim 16 without prejudice or disclaimer.

Amend claims 14, 15, 17-24, and 41-48

14. (Amended) [A] An article comprising a birefringent dielectric multilayer film that reflects at least 50% of light in a band at least 100 nm wide in a wavelength region of interest, wherein the film is heat set at a temperature sufficient to render the film capable of shrinking so as to conform without substantial wrinkling [to a] when positioned between two substrates, the two substrates having a compound curvature and a size, wherein the film has a size comparable to the size of the two substrates.

15. (Amended) The [film] article of claim 14, wherein the wavelength region of interest is from about 700 nm to about 2000 nm.

17. (Amended) The [film] article of claim 14, wherein the film is comprised of alternating layers of a first polymer and a second polymer.

18. (Amended) The [film] article of claim 17, wherein the first polymer is selected from the group consisting of PEN and coPEN, and the second polymer is selected from the group consisting of PMMA and co-PMMA.

19. (Amended) The [film] article of claim 17, wherein the first polymer is coPET and the second polymer is selected from the group consisting of PET and co-PMMA.

20. (Amended) [A] An article comprising a birefringent dielectric multilayer film that reflects at least 50% of light in a band at least 100 nm wide in a wavelength region of interest, wherein the film is heat set at a temperature sufficient to enable the film to shrink [at least about 0.4%] up to about 4% in both in-plane directions upon heating.

21. (Amended) The [film] article of claim 20, wherein the wavelength region of interest is from about 700 nm to about 2000 nm.

22. (Amended) The [film] article of claim 20, wherein the film is heat set at a temperature sufficient to enable the film to shrink at least about 0.7% in at least one in-plane direction upon heating.

23. (Amended) The [film] article of claim 20, wherein the film is heat set at a temperature sufficient to enable the film to shrink at least about 1.0 % in at least one in-plane direction upon heating.

24. (Amended) The [film] article of claim 20, wherein the film has a first shrinkage in a first in-plane direction and a second shrinkage in a second in-plane direction, and the first direction is normal to the second direction.

41. (Amended) [A pre-laminate] The article of claim 14 further comprising a first layer of an energy absorbing material [and a layer of a film, wherein the film layer comprises a birefringent dielectric multilayer film that reflects at least 50% of light in a band at least 100 nm wide in a wavelength region of interest, wherein the film is heat set at a temperature sufficient to render the film capable of shrinking to conform without substantial wrinkling to a substrate having a compound curvature].

42. (Amended) [A pre-laminate] The article of claim 20 further comprising a layer of an energy absorbing material [and a layer of a film, wherein the film layer comprises a birefringent dielectric multilayer film that reflects at least 50% of light in a band at least 100 nm wide in a wavelength region of interest, wherein the film is heat set at a temperature sufficient to render the film capable of shrinking by at least in the range of about 0.4% to about 4% in both in-plane directions upon heating].

43. (Amended) The [pre-laminate] article of claim 41, wherein the wavelength region of interest is from about 700 nm to about 2000 nm.

44. (Amended) The [pre-laminate] article of claim 42, wherein the wavelength region of interest is from about 700 nm to about 2000 nm.

45. (Amended) The [pre-laminate] article of claim 41, further comprising a second layer of an energy absorbing material on a surface of the film opposite the first layer of energy absorbing material.

46. (Amended) The [pre-laminate] article of claim 45, wherein the second layer of energy absorbing material further comprises a shade band layer.

47. (Amended) A laminate comprising the [pre-laminate] article of claim 45 between two non-planar layers of a glazing material.

48. (Amended) A laminate comprising the [pre-laminate] article of claim 46 between two non-planar layers of a glazing material.

Add new claims 55-73.